



#### 4.2.5 Graham County

##### Geography

Graham County encompasses 4,630 square miles and is located in the southeastern part of the State. The County's characteristics range from the gradually sloping corridor of the Gila River Valley to the steeply inclined pine-oak forests located on Mount Graham and other parts of the Pinaleno and Santa Teresa Mountains. The majority of the County is comprised of high desert plains and foothills that are typical to the Sonoran and Chihuahuan Deserts. The County is mapped into four ecoregions, Arizona Mountain Forests, Chihuahuan Desert, Sierra Madre Occidental Pine-Oak Forest and the Sonoran Desert. The Forest elevations range from 4,000 to 13,000 feet, resulting in comparatively cool summers and cold winters. The Chihuahuan Desert elevations range between 3,000 to 4,500 with hot and dry summers and mild to cool winters. The Pine-Oak Forest elevations are generally above 5,000 feet with cool summers and cold winters. The Sonoran Desert elevations vary between sea level and 3,000 feet with hot and dry summers and mild winters.

##### Population

In 2005, the population of the County was 35,455. The population grew 5.8% between 2000 and 2005, which is marginally less active than the State's growth of 17.8% in the same period. The populations of the County's main cities are referenced below. Safford, Graham's county seat, also has the highest population. Growth projections indicate a very moderate rate of population increase throughout the County, with Safford the only community expected to see a substantial gain in population.

Graham County Population, 1990-2040							
Jurisdiction	1990	2000	2005	2010	2020	2030	2040
Graham County	26,554	33,498	35,455	37,441	41,119	44,556	47,623
Pima	1,725	1,989	2,085	2,422	2,669	2,907	3,132
Safford	7,359	9,232	9,360	12,569	13,473	14,853	16,630
San Carlos Apache Reservation				N/A	N/A	N/A	N/A
Thatcher	3,763	4,022	4,550	5,036	5,763	6,373	6,869
Note: Figures for 1990, 2000, 2005 from Arizona Dept. of Commerce. Figures for 2010-2040 from AZ DES (projections date from 1997).							
Source: Arizona Department of Commerce, May 2003; Arizona Department of Economic Security, February 1997.							

##### Economy & Labor Force

Major industries in the County include Public Administration, Services and Manufacturing. The County has a civilian labor force of 12,222 people and an unemployment rate of 6.6%, a slightly higher ratio than the State rate of 4.6% for 2005.

##### Historic Hazard Events

During the development of the original State of Arizona All-Hazard Mitigation Plan, a list of historic hazard events was compiled. Most counties researched local records and governmental databases to update and add records of recent hazards to the state compiled list for use in their plans. Additional hazard records were researched using the same criteria, with the exception that all damages greater than \$1 were included. Therefore, due to the variety of data sources and criteria, it should be kept in mind that the numbers reported reflect the availability of such data from those sources and the numbers are expected to under-predict the losses actually sustained over the past 30 to 40 years. A more thorough search for historic data in future planning efforts is mentioned in the county plans and encouraged by ADEM.

It is our hope that this data coupled with other risk assessment information will prove to be instrumental in assisting the County and State in future planning and mitigation efforts. We believe this can happen by this data accurately indicating which hazards we are most susceptible to; how damaging these hazards can be to us; and the damage costs or costs avoided through future mitigation projects.



Historic Record of Disaster Events in Graham County								
Event Type	Statewide or Multiple County, Incl Graham				Substantially Graham			
	Total	Fatalities	Injuries	Loss \$	Total	Fatalities	Injuries	Loss \$
Drought	69	0	0	300,244,000	1	0	0	2,000,000
Flooding/Flash Flooding	7	19	112	1,215,011,000	9	0	0	20,697,000
Hazardous Materials Incidents	3	0	0	493,000	1	0	1	0
Thunderstorms/High Winds	0	0	0	0	3	0	0	220,000
Tropical Storms/Hurricane	7	37	975	390,109,000	0	0	0	0
Wildfire	16	0	0	3,115,000	21	0	28	150,000
Winter Storms	1	0	0	100,000	0	0	0	0
Note: "Statewide or Multiple County, Incl Graham" events met the 1 or more of the following criteria: at least 1 injury and/or fatality or Historical Significance. All had at least \$50,000 in reported Losses. "Substantially Graham" events met 1 or more of the following criteria: at least 1 reported injury and/or fatality or Historical Significance. No minimum dollar amount for Losses was used. All information is derived from the best data available at the time.								
Source: Graham County Multi-Hazard Mitigation Plan, FEMA Approved September 2005.								

### Vulnerability

The County has a small number and modest proportion of population that is potentially vulnerable to hazards. There is a relatively youthful resident base, with 27.9% of its citizens less than 18 years of age and only 12.7% over the age of 65.

Graham County Populations Potentially Vulnerable to Hazards, 2005				
Jurisdiction	Population			
	Total	Under 18 yrs	65+ years	Below Poverty Level
Arizona	6,044,985	1,607,966	773,758	840,253
Graham County	35,455	9,892	4,503	7,268
As a % of County	100%	27.9%	12.7%	20.5%
As a % of State	.6%	.6%	.6%	.9%
Source: Estimates based on US Census Bureau data, 2007. Poverty Level as defined by US Census Bureau.				

Graham County Dwelling Units Potentially Vulnerable to Hazards, 2005		
Jurisdiction	Housing Units	
	Total	Built Before 1970
Arizona	2,544,806	490,710
Graham County	11,775	3,770
Source: Estimates based on US Census Bureau. Data, 2007.		

### Hazards & Mitigation Strategy

Using the results of the County's vulnerability and capability analysis and the goals and objectives, a list of actions/projects was formulated. The actions/projects were then evaluated and ranked using the STAPLEE procedure. Below are the top ranking identified hazards and their actions/projects as indicated in the County's Hazard Mitigation Plan approved by FEMA on September 9, 2005:

#### Drought

Action 1: Develop drought contingencies to include water tanker deployment, culinary will protection and conservation plans.

#### Flooding/Flash Flooding

Action 1: Install flood monitoring equipment.

Action 2: Evaluate 100 year floodplain at 8<sup>th</sup> Avenue Bridge.

#### Wildfires

Action 1: Reduce fuel load on Mt Graham, particularly in the area of the scopes, cabins.



## Mitigation Strategy Progress

Through development of this Plan, the need to significantly refine the goals/objectives and actions/projects in our original Plan was evident. We believe this need is a result of the determination to focus the Plan more on natural caused hazards as other hazards are covered in their appropriate plans (i.e. health, terrorism, etc.). There is also much to be said about the increased amount of information available regarding hazard mitigation planning.

To encourage our jurisdictions to re-evaluate their Plan's Mitigation Strategy as well, each County was asked to indicate their action/project progress since the development of their Plan. In response to our request, the County provided the information below in June 2007:

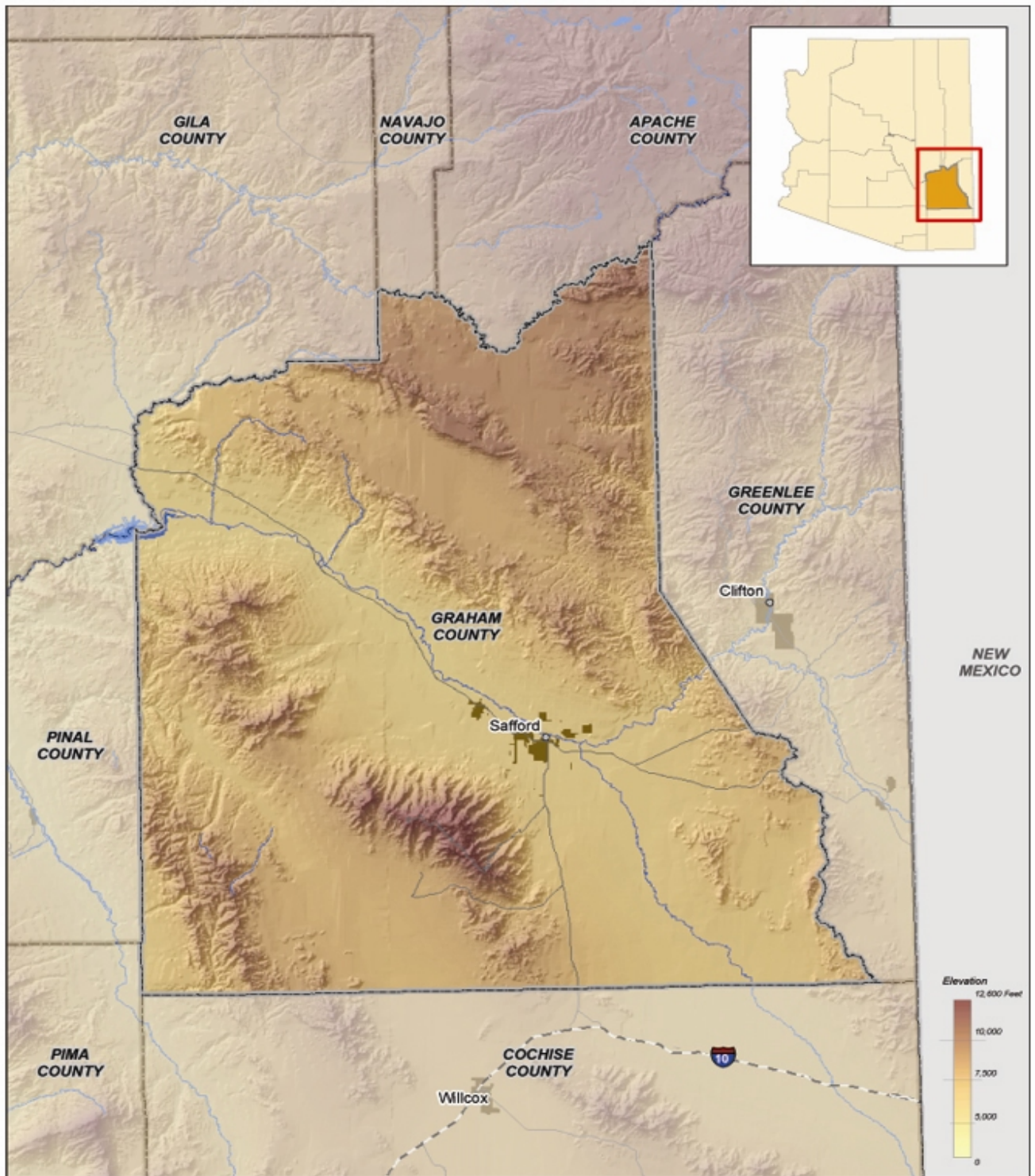
Action/Project Name	Action# in Current Plan	Hazard Mitigated	Progress Summary
Code Adoption	1.B.1	All	Building codes adopted
Interoperable Communication	4.A	All	Improving interoperable comm
Coordination w/flood agencies NFIP Compliance	5.C & 5.D	Flood	Working w/FEMA on new FIRM maps. Revising Floodplain Ord.
Asset Protection	9.B	Haz Material	Discussing alternate routes for HAZMAT vehicles

## Other Planning Mechanisms

During their planning process, the County staff reviewed and evaluated their resources and capabilities in the areas of Existing Plans, Policies and Ordinances; Technical Staff/Resources and Financial Resources. Although all resources are important to a community's ability to mitigate the effects of natural and human-caused hazards, we elected to ask the County to complete a survey indicating their legal and regulatory resources to be included in the Plan. We are pleased to receive feedback that reflects awareness of the need for regulations and guidelines that may have an effect on loss reduction. We believe such resources and capabilities can play a critical part in developing and maintaining a more disaster resistant community. The information below was provided by the County in June 2007:

	Yes	Approval	Responsible	
Plan/Policy/Ordinance	No	Date	Authority	Plan Use/Comments
Building Code	Y	7/2006	Planning & Zoning Dept.	
Zoning Ordinance	Y	8/1969	Planning & Zoning Dept.	
Subdivision Ordinance or Regulations	Y	8/1969	Planning & Zoning Dept.	
Special Purpose Ordinance	Y			Floodplain Ordinance
Site Plan Review Requirements	Y			
General or Comprehensive Plan	Y	4/2002	Planning & Zoning Dept.	
Emergency Response Plan	Y			

Source: Survey from ADEM to County Emergency Managers, 2007.



#### LEGEND

- - Interstate
- Highway
- City
- Major Stream
- County
- Lake
- County Seat



State of Arizona  
Multi-Hazard Mitigation Plan

#### Map 7 Major Features of Graham County